

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/13823

A. CLASSIFICATION OF SUBJECT MATTER  
Int.Cl<sup>7</sup> H01J29/28, 9/22, 31/12

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl<sup>7</sup> H01J29/28, 29/32, 9/22, 31/12

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

|                           |           |                            |           |
|---------------------------|-----------|----------------------------|-----------|
| Jitsuyo Shinan Koho       | 1926-1996 | Toroku Jitsuyo Shinan Koho | 1994-2004 |
| Kokai Jitsuyo Shinan Koho | 1971-2004 | Jitsuyo Shinan Toroku Koho | 1996-2004 |

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages                            | Relevant to claim No.                     |
|-----------|---|---|
| X         | WO 02/37522 A1 (Toshiba Corp.),<br>10 May, 2002 (10.05.02),<br>Full text; all drawings                        | 1-3, 6-10,<br>13-19, 22-24,<br>27, 29-30, |
| Y         | Full text; all drawings   | 26, 28                                    |
| A         | Full text; all drawings   | 4-5, 11-12,<br>20-21, 25.                 |
|           | & JP 2002-14100 A & EP 1336981 A1   |   |
| Y         | JP 2000-319588 A (Sony Corp.),<br>21 November, 2000 (21.11.00),<br>Full text; all drawings<br>& US 6559590 B1 | 26, 28                                    |

 Further documents are listed in the continuation of Box C. See patent family annex.

## \* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
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- "P" document published prior to the international filing date but later than the priority date claimed

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- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search  
29 January, 2004 (29.01.04)Date of mailing of the international search report  
10 February, 2004 (10.02.04)Name and mailing address of the ISA/  
Japanese Patent Office

Authorized officer

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## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages                          | Relevant to claim No. |
|-----------|---|-----------------------|
| A         | JP 54-105959 A (Hitachi, Ltd.),<br>20 August, 1979 (20.08.79),<br>Full text; all drawings<br>(Family: none) | 25                    |